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Presentation Title: Holocene deformation of a shoreline in Mono Basin, CA: comparison of SRTM to TOPSAR and GPS data

Abstract: Testing the use of the Shuttle Radar Topography Mission (SRTM) as a geological instrument was undertaken by comparing SRTM data with those from TOPSAR and GPS measurements made on a prominent late-Holocene lake terrace that encircles Mono Lake, California. Topographic profiles across the late-Holocene terrace were constructed using the SRTM, TOPSAR, and GPS measurements. It was noted in reconciling the SRTM DEM to the TOPSAR DEM that there was some discrepancy. In the northern part of Mono Basin, the SRTM profiles were above the TOPSAR profiles in regions of slope concavity. This difference is due to the phase-center offsets of antennae. However, the SRTM data for the southern rim of the lake terrace matched the TOPSAR data more closely. The SRTM profiles were more consistent with GPS profiles, having an average difference in elevation of 4 m. The break-in-slope of the profiles at the beach berm - shoreline bluff were used as a vertical datum. These displayed remarkable deformation when plotted against the polygonal distance around the lake. Near the vents of the latest eruption of Mono Craters, there is a vertical offset of 29 m in the break-in-slope, which may be produced by a NW trending dike underlying the Mono Craters.